

CERCLA PRELIMINARY ASSESSMENT REPORT

**CASTLE CONSTRUCTION SITE
WILMINGTON, WILL COUNTY, ILLINOIS
REVISION 1**

**U.S. EPA ID: ILN000510872
SSID: C5Q3**

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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Technical Direction Document No.: S05-0008-1211-017
Document Control No.: 2054-2A-BGXP

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February 2013

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ABBREVIATIONS AND ACRONYMS

°F	Degree Fahrenheit
bgs	Below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	<i>Code of Federal Regulations</i>
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
ft	Foot
GIS	Geographic Information System
gpm	Gallon per minute
IDNR	Illinois Department of Natural Resources
IDPH	Illinois Department of Public Health
Illinois EPA	Illinois Environmental Protection Agency
ISGS	Illinois State Geological Survey
KRSP	Kankakee River State Park
MLRA	Major Land Resource Area
NFRAP	No Further Remedial Action Planned
NPL	National Priorities List
NRCS	National Resources Conservation Service
PA	Preliminary Assessment
PCB	Polychlorinated biphenyl
PIN	Permanent index number
PPE	Probable point of entry
PRP	Potentially responsible party
SDWIS	Safe Drinking Water Information System
Site	Castle Construction Site
SR	State Route
TDL	Target distance limit
UMTRA	Uranium Mill Tailings Radiation Control Act
USFWS	U.S. Fish and Wildlife Service
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
WESTON	Weston Solutions, Inc.

1. INTRODUCTION

The Region 5 Offices of the U.S. Environmental Protection Agency tasked Weston Solutions, Inc. (WESTON®), to conduct a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Preliminary Assessment (PA) of the Castle Construction site located at 19841 West Illinois State Route (SR) 102 in Wilmington, Will County, Illinois (the Site; **Figure 1-1**). The Site is an approximately 30-acre parcel used as the location of an excavation and general contracting business, Castle Construction.

The PA was initiated by a petition submitted by a former resident of Wilmington, Illinois, who, under the authority of CERCLA Section 105(d), requested that EPA conduct a PA at the Site. According to the petition, people of the City of Wilmington, Illinois, the unincorporated communities of Ritchie and Resthaven, Illinois, and surrounding areas are threatened by the impacts of illegal dumping by C. L. Hale that occurred at the C.L. Hale and Castle Construction sites from the 1960s to the 1990s, as allegedly witnessed by a local resident. According to the petition, the C.L. Hale was owner of an illegal hazardous materials dump site at 34135 Evergreen Street in Wilmington, Will County, Illinois. The C.L. Hale dump site is located approximately 2.25 miles northwest of the Castle Construction Site. During the 1970s, open dumping by local industries occurred at the C. L. Hale Septic Site, where a variety of wastes (such as household garbage, septic wastes, waste oils, greases, and solvents) were disposed of illegally. Styrene, a material used to produce plastics, represented the largest waste stream (Illinois Environmental Protection Agency [Illinois EPA] 2000). The C. L. Hale site had been previously investigated in the mid-1980s and given a status of No Further Remedial Action Planned (NFRAP) by EPA. Region 5. In 1999, soil excavation and drum removal activities were conducted by the potentially responsible party (PRP) at the direction of the Illinois EPA. Over 12,700 tons of waste, including contaminated soil and approximately 1,000 55-gallon drums of waste, were removed from the former C. L. Hale Septic Site. The petition states that the petitioner believes that water in the area has been impacted by dumping at the two sites and that the dumping also may have caused cancer, infertility, lymphoma, breast cancer, and other illnesses. EPA has attempted to interview the alleged witness to corroborate the use of the Castle Construction Site

as a C.L. Hale's illegal dumping area. However, EPA has not been able to interview the alleged witness. Therefore, it is not confirmed by the EPA at this time if the site was illegal dumping area for C. L. Hale site.

The National Oil and Hazardous Substances Pollution Contingency Plan (Title 40 of the *Code of Federal Regulations* [CFR], Part 300) requires that a PA be performed at all sites entered into the Comprehensive Environmental Response, Compensation, Liability, and Information System (CERCLIS), EPA's inventory of hazardous waste sites.

The PA is an initial step in the Superfund process. The PA has a limited scope and is intended to collect readily available information. The PA is designed to distinguish between sites that pose little or no threat to the public health or welfare of the United States or the environment and sites that require further investigation. The PA also supports emergency response and removal activities, fulfills public information needs, and generally furnishes appropriate information about the site early in the CERCLA assessment process.

If the findings of the PA determine that further investigation is necessary, the site will continue to progress through the Superfund investigative process and undergo a CERCLA Site Inspection. The Site Inspection evaluates the extent that a site presents a threat to the public health or welfare of the United States or the environment. This evaluation may be accomplished by collecting and analyzing waste samples and environmental media samples to determine if hazardous substances are present at the site and migrating to the surrounding environment. The Site Inspection provides information necessary to determine if the site qualifies for possible inclusion on the National Priorities List (NPL) or should have a status of No Further Remedial Action Planned (NFRAP).

At any time throughout the Superfund evaluation process, the Site may have NFRAP status, be referred to another state or federal cleanup program, or be recommended for further action. The PA is performed under the authority of CERCLA.

The following sections of this CERCLA PA Report discuss the Site background (Section 2), past environmental investigations (Section 3), the potential source (Section 4), and pathways (Section

5), and presents a summary of the PA (Section 6), followed by a list of references used to prepare this report (Section 7). Figures and Attachment are presented after the references section.

2. SITE BACKGROUND

This section discusses the Site description, history, and regulatory status.

2.1 SITE DESCRIPTION

The Site address is 19841 West Illinois SR 102, Wilmington, Will County, Illinois (**Figure 1-1**). The Site's geographical coordinates are 41° 14' 32.65" North latitude and 88° 5' 15.84" West longitude. The Site occupies approximately 30 acres and has a trapezoidal shape.

According to the Will County Geographic Information Systems (GIS) Department, three parcels are associated with the Site: permanent index numbers (PIN) 08-25-21-100-024-0000, 08-25-21-100-025-0000, and 08-25-21-100-026-0000 (**Figure 2-1**) (Will County GIS Department 2012). The parcel at PIN 08-25-21-100-024-0000 contains a pond, residential dwelling, and shed. The parcel at PIN 08-25-21-100-025-0000 contains five structures, potentially sheds or barns, and a plot of trees. The parcel at PIN 08-25-21-100-026-0000 contains a residential dwelling and an agricultural plot. On January 21, 2013, WESTON viewed the Site from the public right-of-way and observed two addresses associated with this location: 19841 and 19951 West Illinois SR 102.

The Site is bordered to the north by West Illinois SR 102, with a mix of residential and agricultural properties beyond; to the east by the Kankakee River State Park (KRSP), with a mix of residential and agricultural properties beyond; to the south by agricultural properties, with the Kankakee River beyond; and to the west by a mix of residential and agricultural properties. The closest perennial stream is Rayns Creek, located 500 feet (ft) southeast of the Site. The Kankakee River is located approximately 1,500 ft south of the Site.

The following sections describe Site soil (Section 2.1.1), geology and hydrogeology (Section 2.1.2), climate (Section 2.1.3), wetlands (Section 2.1.4), and floodplains (Section 2.1.5).

2.1.1 Soil

The Site is located in Major Land Resource Area (MLRA) 110, the Northern Illinois and Indiana Heavy Till Plain (U.S. Department of Agriculture [USDA] 1981). The soil series at the Site consists of Watseka loamy fine sand, Oakville fine sand, Starks silt loam, Ade loamy fine sand, and Martinsville Loam. The *Soil Survey of Will County, Illinois* provides detailed information describing the characteristics of these soils (USDA and National Resources Conservation Service [NRCS] 2004).

2.1.2 Geology and Hydrogeology

According to the Illinois State Geological Survey (ISGS), three wells have been installed at the Site. Well logs provided by the ISGS indicate the information summarized below (ISGS 2008).

- API Well No. 121973793700 was installed in January 1998 to a depth of 25 ft below ground surface (bgs). Sand and gravel were encountered from 0 to 25 ft bgs. The static water level in the well was 4 ft bgs.
- API Well No. 121973844100 was installed in November 1999 to a depth of 25 ft bgs. Glacial drift was encountered from 0 to 25 ft bgs. The static water level in the well was 9 ft bgs.
- API Well No. 121974227800 was installed in October 2006 to depth of 23 ft bgs. Soil was encountered from 0 to 1 ft bgs, and glacial drift was encountered from 1 to 23 ft bgs. The static water level in the well was 3 ft bgs.

ISGS well logs suggest a glacial drift formation consisting of sand and gravel at the Site to depth of at least 25 ft bgs. No potentiometric surface for the on-site sand and gravel aquifer could be created for the figures in this report based on the three well logs provided by ISGS (ISGS 2008). However, it is suspected the aquifer follows the topographic gradient of the Site to the southwest.

ISGS well logs for nearby off-site residential wells indicate the presence of limestone bedrock at depths of up to 10 ft bgs. The well log for API Well No. 121972985200, located 0.4 mile northeast of the Site, indicates the presence of limestone from 10 to 21 ft bgs, shale from 21 to 96 ft bgs, a second layer of limestone from 96 to 140 ft bgs, a second layer of shale from 140 to 234 ft bgs, Galena Limestone from 234 to 590 ft bgs, and St. Peter Sandstone from 590 to 625 ft bgs (ISGS 2008).

2.1.3 Climate

According to the *Soil Survey of Will County, Illinois*, Will County has a temperate, humid, continental climate. In winter, the average temperature is 25.2 degrees Fahrenheit (°F) and the average daily minimum temperature is 17.0 °F. In summer, the average temperature is 72.1 °F and the average daily maximum temperature is 82.8 °F. The average annual total precipitation in Will County is 36.84 inches, and the average seasonal snowfall is 10.2 inches (USDA and NRCS 2004).

2.1.4 Wetlands

According to the U.S. Fish and Wildlife Service (USFWS), no wetlands are present at the Site (USFWS 2012).

2.1.5 Floodplains

According to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map No. 17197C0580E, the Site is located in Zone X, an area determined to be outside the 0.2 percent annual chance floodplain. The Kankakee River 100-year flood plain extends to approximately 100 ft south of the Site (FEMA 1995).

2.2 SITE HISTORY

According to a National Comprehensive Report on Homer Castle, Castle Construction was established in 1964 as JR Castle Construction, Inc. (National Comprehensive Report 2012). Castle Construction is a private company categorized under renovation, remodeling, and repairs for industrial buildings (Manta Media, Inc. 2012). Based on aerial photographs, the Site appears to be used to store heavy machinery and equipment (Google 2013). At some point, the site was allegedly a pig farm. The Illinois Secretary of State website reports that JR Castle Construction, Inc., was incorporated on March 16, 1994 (Illinois Secretary of State 2013). According to the Google Earth historical aerial photographs, in 1993, the Site was undeveloped land with no improvements. In 1998, a residential dwelling and two additional structures, potentially barns or sheds, appear to have been built on the Site. In 2002, a second residential dwelling and three additional structures appear to have been built on the Site. Finally, in 2005, a pond appears to

have been built on the Site (Google 2013). Homer Castle died in May 2011 (National Comprehensive Report 2012).

2.3 REGULATORY STATUS

The Site currently is in the CERCLIS database. According to a database search of EPA Envirofacts, the Site is not listed in the following EPA-regulated facility databases (EPA 2013c):

- AFS – Air Facility System database
- ACRES – Assessment, Cleanup and Redevelopment Exchange System database
- BR – Hazardous Waste Report (Biennial Report) database
- Brownfields Cleanups database
- PCS/ICIS – Permit Compliance System and Integrated Compliance System database
- RADInfo – Radiation Information Database (includes Uranium Mill Tailings Radiation Control Act [UMTRCA] sites)
- RCRAInfo – Resource Conservation and Recovery Act Information database
- SRS – Substance Registry Service database
- TRI – Toxic Release Inventory database
- TSCA – Toxic Substances Control Act database

According to the Illinois EPA Bureau of Land, the Site is not listed in the following Illinois EPA-regulated facility databases (Illinois EPA 2011):

- Brownfields database
- Facility Compliance Tracking System database
- Groundwater Ordinance database
- Leaking underground storage tank database
- Redevelopment Assessment database
- Site Remediation Program database
- Solid Waste Permit Activities database
- State Sites Unit database
- Used Tire database

Additionally, the Castle Construction Site is not described as being associated with the C.L. Hale site in any EPA or Illinois EPA documentation describing environmental investigations or cleanup at the C.L. Hale site.

3. PAST ENVIRONMENTAL INVESTIGATIONS

WESTON found no evidence of past environmental investigations related to the Site.

4. POTENTIAL SOURCE

The PA petition alleges illegal dumping occurred at the Castle Construction site from the 1960s to the 1990s, as allegedly witnessed by a local resident. According to the petition, C.L. Hale was the owner of an illegal hazardous materials dump site at 34135 Evergreen Street in Wilmington, Will County, Illinois, approximately 2.25 miles northwest of Castle Construction Site. During the 1970s, open dumping by local industries occurred at the C. L. Hale Septic Site, where a variety of wastes (such as household garbage, septic wastes, waste oils, greases, and solvents) were disposed of illegally. Styrene, a material used to produce plastics, represented the largest waste stream (Illinois EPA 2000). The petition states that the petitioner believes that water in the area has been impacted by this dumping and that the dumping also may have caused cancer, infertility, lymphoma, breast cancer, and other illnesses.

In October 1984, EPA contractors inspected the C. L. Hale Septic Site and collected soil samples. The samples indicated the presence of the following organic contaminants: 4-methyl-2-pentanone, benzene, ethylbenzene, styrene, toluene, and trichloroethene. The samples also indicated the presence of the following inorganic contaminants: arsenic, cadmium, chromium, and nickel (Illinois EPA 1998). In 1999, soil excavation and drum removal activities were conducted by the PRP at the direction of the Illinois EPA. Over 12,700 tons of waste, including contaminated soil and approximately 1,000 55-gallon drums of waste, were removed from the former C. L. Hale Septic Site.

No samples have been collected from the Site. Based on aerial photographs the Site appears undeveloped in 1993 (Google 2013). By 2002, the Site contained a pond, two residential dwellings, six structures, potentially sheds or barns, a plot of trees, and a plot of agriculture. The

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Site currently appears to be used to store heavy machinery and equipment used for its renovation, remodeling, and repair business for industrial buildings. According to the petition, the material allegedly dumped at the Site may be similar to the waste material disposed of at the former C. L. Hale Septic Site. As such, the potential source at the Castle Construction Site may be contaminated soil. The quantity of potentially contaminated soil could not be estimated. However, the Castle Construction Site area is approximately 30 acres.

EPA has attempted to interview the alleged witness to corroborate the use of the Castle Construction Site as a C.L. Hale's illegal dumping area. However, EPA has not been able to interview the alleged witness. Therefore, it is not confirmed by the EPA at this time if the site was illegal dumping area for C. L. Hale site.

5. PATHWAYS

This section discusses the groundwater, surface water, soil exposure, and air pathways.

5.1 GROUNDWATER PATHWAY

The groundwater pathway is of concern for the Site because of the potential for Site-related contaminants to migrate into local groundwater. **Appendix A** presents the 4-Mile Radius Map for the Site.

ISGS well logs suggest that a glacial drift formation consisting of sand and gravel exists at the Site to at least 25 ft bgs (ISGS 2008). No potentiometric surface for the on-site glacial drift aquifer could be created for the figures in this report based on the three well logs provided by ISGS. However, it is suspected the aquifer flow follows the topographic gradient of the Site to the southwest.

The generalized area geology is depicted on three cross section figures created based on available ISGS well logs (ISGS 2008). **Figure 5-1** shows the locations of the geologic cross sections. **Figures 5-2, Figure 5-3, and Figure 5-4**, respectively, show cross sections A-A,' B-B,' and C-C'. The generalized area geological cross sections indicate that the sand and/or gravel layer is continuous to approximately 2 miles west, northwest, southwest, and southeast of the

Site. Approximately 3,000 ft to the east and 1.75 miles to the northeast of the Site, the sand and/or gravel layer is replaced by clay layer.

The following sections discuss the public water supply (Section 5.1.1), private residential water supply (Section 5.1.2), karst areas (Section 5.1.3), and wellhead protection areas (Section 5.1.4) in the Site area.

5.1.1 Public Water Supply

According to the City of Wilmington Department of Public Works (WESTON 2013) and an EPA Safe Drinking Water Information System (SDWIS) search for Will County, Illinois (EPA 2013b), Lakewood Shores and the City of Wilmington obtain groundwater from a community water system that serves the same people year-round. The Reed Custer Primary School obtains groundwater from a non-transient, non-community water system that serves the same people but not year-round. The Kankakee River State Park (KRSP) obtains groundwater from a transient, non-community water system that does not consistently serve the same people. Both the school and park are located within the 4-mile target distance limit (TDL) of the Site (**Appendix A**). The following sections summarize the public groundwater supply systems for Lakewood Shores (Section 5.1.1.1), City of Wilmington (Section 5.1.1.2), Reed Custer Primary School (Section 5.1.1.3), and KRSP (Section 5.1.1.4).

5.1.1.1 Lakewood Shores

Lakewood Shores is located about 1.5 miles south of the City of Wilmington and within the groundwater 4-mile TDL from the Site (**Appendix A**). The Lakewood Shores Improvement Association installed a community water system in 1957 (Woller and Sanderson 1983). In 1983, four groundwater wells were in use. Each groundwater well was drilled to 700 ft bgs and open to the Maquoketa group, the Galena-Platteville Dolomite group, and Glenwood-St. Peter Sandstone group. However, some time before 2008, Lakewood Shores began purchasing surface water from the City of Wilmington (Hect and Knapp 2008; EPA 2013b; WESTON 2013). As a result, although the Lakewood Shores community is located within the groundwater 4-mile TDL, the estimated 868 people served by the community water system (EPA 2013b) are not potentially exposed through the groundwater pathway and are considered under the surface water pathway.

5.1.1.2 City of Wilmington

The City of Wilmington is located within the 3- to 4-mile radius from the Site (**Appendix A**). The City of Wilmington installed a community water system in 1892, and up to three wells historically have been in use. However, in 1990, the City of Wilmington began pumping water from the Kankakee River in 1990 because of concerns about radium contamination in groundwater and overall cost efficiency (Hect and Knapp 2008; WESTON 2013). The system maintains a backup well on South Island, approximately 5.3 miles northwest of the Site, beyond the 4-mile radius from the Site. As a result, although the City of Wilmington is located within the 3- to 4-mile radius of the Site, the estimated 5,764 people served by the city's community water system (EPA 2013b) are not potentially exposed through the groundwater pathway.

5.1.1.3 Reed Custer Primary School

A non-transient, non-community water system provides water to the Reed Custer Primary School located at 35445 Washington Street, Custer Park, Illinois (**Appendix A**). According to the ISGS well log for API Well No. 1219707660, the well at Reed Custer Primary School property was installed in August 1969 to approximately 810 ft bgs into a sandstone formation (ISGS 2008). The well is approximately 2.14 miles west of the Site and serves approximately 300 people (EPA 2013b). Although the Reed Custer Primary School well is within the 2- to 3-mile radius from the Site, it is unlikely to be susceptible to contamination from the Site because it pumps water from a deep sandstone aquifer suspected to be hydraulically separated from the surface glacial drift aquifer.

5.1.1.4 Kankakee River State Park

The KRSP, which borders the Site to the east, installed a public water supply in 1953. According to the City of Kankakee, over 1 million people visit the KRSP each year (City of Kankakee Undated). The closest well to the Site is Well No. 5 (Camp Site 2 - Chippewa Campgrounds), which was completed in October 1958 to 102 ft bgs (**Appendix A**). This well serves one fountain and four taps at Camp Site 2 of the park (Woller and Sanderson 1983). This well is located approximately 4.02 miles southeast of the Site, beyond the 4-mile radius from the

Site. Therefore, although the KRSP is located within the groundwater 4-mile TDL, the park's groundwater wells are located beyond the Site's 4-mile radius.

5.1.2 Private Residential Water Supply

Based on the U.S. Geological Survey (USGS) topographic map and 2010 U.S. Census Bureau data for Will County, Illinois, approximately 2,591 people live outside the incorporated boundaries of Lakewood Shores and the City of Wilmington within a 4-mile radius of the Site (USGS 1973a, 1973b, 1999a, 1999b; U.S. Census Bureau 2012). This population is supplied with water through private residential drinking wells. The residential population with private residential wells within the groundwater 4-mile TDL were evaluated as potential primary targets as summarized below.

Distance from Site	Households	Approximate Population using Residential Well
On site	2	6
0 to 0.25 mile	2	6
0.25 to 0.5 mile	9	27
0.5 to 1 mile	38	114
1 to 2 miles	298	899
2 to 3 miles	247	743
3 to 4 miles	286	861

Households within the incorporated boundary of City of Wilmington located within the 3- to 4-mile radii from the Site are not included in the population estimates because the City of Wilmington community water system supplies water to this population. Households within the boundary of the Lakewood Shores community located between two and four miles from the Site are not included in the population estimates because the Lakewood Shores community water system supplies water to this population.

5.1.3 Karst Areas

According to the ISGS Map Service, there are no karst areas within a 4-mile radius of the Site (ISGS 2008).

5.1.4 Wellhead Protection Areas

According to the Illinois Resource Management Mapping Service, there are no community water system Phase II wellhead protection areas within a 4-mile radius of the Site (University of Illinois Board of Trustees 2003).

5.2 SURFACE WATER PATHWAY

The surface water pathway consists of two pathways, the surface water overland migration and groundwater to surface water pathway. Each pathway is discussed below. **Appendix A** presents a 15-mile TDL Map showing the 15-mile TDL from the probable point of entry (PPE).

5.2.1 Surface Water Overland Migration

Surface water runoff from the Site flows southeast to Rayns Creek, a perennial water body, approximately 500 ft southeast of the Site. Surface water in Rayns Creek flows approximately 0.48 mile south, where the creek discharges into the Kankakee River. The Kankakee River flows northwest approximately 14.52 miles to the TDL. In 2011, the average discharge within the Kankakee River at a location within in the 15-mile TDL was 4,900 cubic feet per second (USGS 2013), making the classification of this reach of the Kankakee River a large stream to river.

The following sections discuss the public water supply (Section 5.2.1.1), fisheries (Section 5.2.1.2), sensitive environments (Section 5.2.1.3), and endangered and threatened species (Section 5.2.1.4).

5.2.1.1 Public Water Supply

In 1990, the City of Wilmington began using the Kankakee River for its community water system because of concerns about radium contamination in groundwater and overall cost efficiency (Hect and Knapp 2008; WESTON 2013). The community water system intake is located 8.3 stream miles from the PPE (**Appendix A**). The community water system provides water to approximately 5,764 residents in the City of Wilmington (EPA 2013b). The City of Wilmington can process up to 4.8 million gallons per day from the Kankakee River (Hect and

Knapp 2008). Water is gravity-fed into a wet well before it is pumped to a treatment plant. The intake can pump 1,000 gallons per minute (gpm) but the plant can treat only 600 gpm.

Lakewood Shores purchases drinking water from the City of Wilmington (Hect and Knapp 2008; WESTON 2013). The City of Wilmington community water system provides water to 868 residents in Lakewood Shores (EPA 2013b).

5.2.1.2 Fisheries

The Kankakee River system contains a rich assemblage of some 72 different species of fish (Illinois Department of Natural Resources [IDNR] 1996). Within the 15-mile TDL, the sport fishery includes smallmouth bass (*Micropterus dolomieu*), largemouth bass (*Micropterus salmoides*), rock bass (*Ambloplites rupestris*), walleye (*Sander vitreus*), northern pike (*Esox lucius*), crappie (*Pomoxis sp.*), bluegill (*Lepomis macrochirus*), and channel catfish (*Ictalurus punctatus*).

According to the Illinois Department of Health (IDPH), fish consumption advisory exists within the 15-mile TDL for carp (*Cyprinus carpio*), due to high levels of polychlorinated biphenyls (PCBs), which are not known to be associated with either the C.L. Hale or Castle Construction sites. The IDPH advises that for carp of any size caught between the Kankakee River Dam and the Illinois River, only one meal of carp be consumed per week (IDPH 2012).

5.2.1.3 Sensitive Environments

According to the USFWS, the 15-mile TDL surface water migration pathway is contiguous with approximately 2,500 ft of wetlands along Rayns Creek, a 3.59-acre freshwater forested/shrub wetland (PFO1A) and a 5.47-acre freshwater forested/shrub wetland (PFO1C). These wetlands are located within the KRSP. According to the USFWS, the first three miles of the 15-mile TDL are contiguous with approximately 2.02 miles of wetlands consisting of four freshwater forested/shrub wetlands (PFO1A and PFO1C). According to the USFWS, the 15-mile TDL surface water migration pathway is contiguous with approximately 5.76 miles of wetlands consisting of several freshwater forested/shrub wetlands (PFO1A and PFO1C) present along the riparian regions of the Kankakee River (USFWS 2012).

5.2.1.4 Endangered and Threatened Species

One specimen of the federally endangered sheepsnose mussel (*Plethobasus cyphus*) was collected from the Kankakee River at Wilmington during a 1985 Illinois Natural History Survey (Kasprowicz et al., 1985).

Eleven specimens of the state threatened river redhorse (*Moxostoma carinatum*) were collected from the Kankakee River at the Wilmington Dam during a 2000 IDNR survey (Pescitelli and Rung 2003).

5.2.2 Groundwater to Surface Water Pathway

Groundwater flow direction beneath the Site is unknown but is suspected to be southeast toward Rayns Creek (PPE No. 2) approximately 1,200 ft southeast of the Site. From Rayns Creek, surface water follows the same route as discussed in Section 5.2.1 for the PPE.

5.4 SOIL EXPOSURE PATHWAY

The soil exposure pathway is of concern for the Site because of the potential for residents, workers, and nearby populations to directly contact suspected hazardous substances at the Site.

The Site occupies approximately 30 acres. According to the petition submitted to EPA under the authority of CERCLA Section 105(d), the Castle Construction Site is the location of illegal dumping from the 1960s to the 1990s.

Two residential dwellings are located on the Site. According to the U.S. Census Bureau, the average household in Will County, Illinois, contains 3.01 persons (U.S. Census Bureau 2012). Therefore, there are approximately six people living within the Site boundary. Three residential dwellings border the Site to the north, but these dwelling are more than 200 ft from the Site. The 2010 population living within a 1-mile radius of the Site was 166 people (EPA 2013a). Additionally, in 2012, Castle Construction had five to nine employees (Manta Media, Inc. 2012). No schools or daycare centers are located within 200 ft of the Site.

No sensitive terrestrial environments are located on the Site, but approximately 5.6 acres of the Site appear to be used for agricultural purposes.

5.5 AIR PATHWAY

Two residential dwellings are located on the Site. According to the U.S. Census Bureau, the average household in Will County, Illinois, contains 3.01 persons (U.S. Census Bureau 2012). Therefore, there are approximately six people living within the Site boundary. The EPA EJView mapper, formerly known as the Environmental Justice Geographic Assessment Tool, was used to calculate the population within four miles of the Site (EPA 2013a). The 2010 populations within the distance categories from the Site are summarized below.

Distance from Site	2010 Population
Onsite	6
0 to 0.25 mile	0
0.25 to 0.5 mile	30
0.5 to 1 mile	136
1 to 2 miles	818
2 to 3 miles	904
3 to 4 miles	1,212

According to the USFWS, there are six wetlands comprising a total area of 33.17 acres within a 0.5-mile radius of the Site (USFWS 2012) as summarized below.

Wetland Type	Wetland Classification	Distance and Direction from Site	Acres
Freshwater Emergent Wetland	PEMf	0.2 mile west-southwest	2.18
Freshwater Forested/Shrub Wetland	PFO1A	0.2 mile east-southeast	3.59
Freshwater Emergent Wetland	PEMf	0.25 mile south	0.26
Freshwater Forested/Shrub Wetland	PFO1C	0.35 mile east-southeast	5.47
Freshwater Emergent Wetland	PEMf	0.45 mile east-northeast	1.1
Freshwater Forested/Shrub Wetland	PFO1A	0.45 mile south	20.57
Total Wetland Area			33.17

6. SUMMARY

This PA was initiated by a petition submitted, under the authority of CERCLA Section 105(d), that requested that EPA conduct a PA at the Site. According to the petition, people of the City of

Wilmington, Illinois; the unincorporated communities of Ritchie and Resthaven, Illinois; and surrounding areas are threatened by the impacts of illegal dumping by C. L. Hale that occurred at the Site from the 1960s to the 1990s, as allegedly witnessed by a local resident. According to the petition, C.L. Hale was owner of an illegal hazardous waste dump site at 34135 Evergreen Street in Wilmington, Will County, Illinois. The C.L. Hale dump site is located approximately 2.25 miles northwest of Castle Construction Site. Soil samples collected from the former C. L. Hale Septic Site in 1984 indicated the presence of the following contaminants: 4-methyl-2-pentanone, benzene, ethylbenzene, styrene, toluene, trichloroethene, arsenic, cadmium, chromium, and nickel. In 1999, soil excavation and drum removal activities were conducted by the PRP at the direction of the Illinois EPA. Over 12,700 tons of waste, including contaminated soil and approximately 1,000 55-gallon drums of waste, were removed from the former C. L. Hale Septic Site. EPA has attempted to interview the alleged witness to corroborate the use of the Castle Construction Site as a C.L. Hale's illegal dumping area. However, EPA has not been able to interview the alleged witness. Therefore, it is not confirmed by the EPA at this time if the site was illegal dumping area for C. L. Hale site.

The Castle Construction site occupies approximately 30 acres. Based on aerial photographs the Site appears undeveloped in 1993. By 2002, the Site contained a pond, two residential dwellings, six structures, potentially sheds or barns, a plot of trees, and a plot of agriculture. The Site currently appears to be used to store heavy machinery and equipment used for its renovation, remodeling, and repair business for industrial buildings. The Site is located within a mixed agricultural, residential, and undeveloped area. The closest perennial stream is Rayns Creek, located 500 ft southeast of the Site. The Kankakee River is located 1,500 ft south of the Site. Approximately six 6 people live within the Site boundary, no other people live within 200 ft of the Site, and approximately 166 people live within 1 mile of the Site. No schools or daycare centers are located within 200 ft of the Site.

The Site currently is in the CERCLIS database but no other EPA- or Illinois EPA-regulated facility databases. Additionally, the Site is not described as being associated with the C.L. Hale

site in any EPA or Illinois EPA documentation describing environmental investigations or cleanup at the C.L. Hale site.

Within the 4-mile groundwater TDL from the Site, there is a non-transient, non-community water system that provides water to the Reed Custer Primary School located approximately 2.14 miles west of the Site. This system serves approximately 300 people. Additionally, approximately 2,591 people living outside the incorporated boundaries of Lakewood Shores and the City of Wilmington are supplied with water by private residential drinking wells.

Within the 15-mile surface water TDL from the Site, the City of Wilmington community water system uses the Kankakee River. The community water system intake is located 8.3 stream miles from the PPE. The community water system provides water to 5,764 residents in the City of Wilmington, a portion of which is located within the 3- to 4-mile radius from the Site. Additionally, the City of Wilmington community water system provides potable water to 868 residents in the Lakewood Shores community located within the 2- to 3- and 3- to 4-mile radii from the Site.

The Kankakee River system contains a rich assemblage of 72 different species of fish. Within the 15-mile TDL, the sport fishery includes smallmouth bass, largemouth bass, rock bass, walleye, northern pike, crappie, bluegill, and channel catfish. One specimen of the federally endangered sheepsnose mussel was collected from the Kankakee River at Wilmington during a 1985 Illinois Natural History Survey, and 11 specimens of the state threatened river redhorse (*Moxostoma carinatum*) were collected from the Kankakee River at the Wilmington Dam during a 2000 IDNR survey. According to the IDPH, fish consumption advisory exists within the 15-mile TDL for carp, due to elevated levels of PCBs, which are not Contaminants of Concern (COCs) at the C. L. Hale site.

The 15-mile TDL surface water migration pathway is contiguous, with approximately 2,500 feet of wetlands along Rayns Creek and approximately 5.76 miles of wetlands along the Kankakee River. Additionally, there are six wetlands comprising a total area of 33.17 acres within a 0.5-mile radius of the Site.

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FIGURES

APPENDIX A

4-MILE RADIUS MAP AND 15-MILE TDL MAP
